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Electron paramagnetic resonance in mixed crystals (BaF2) 1-x(LaF3)x Activated by Ce3+ Ions

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Abstract

The electron paramagnetic resonance (EPR) spectra of mixed crystals (BaF2)1 - x - y(LaF3)x(CeF 3)y (y = 0.001 = 0.1%, x = 0-0.02) are investigated in a magnetic field H ‖ C4 at a frequency of 9.5 GHz. The angular dependence of the EPR spectrum is measured for the sample with x = 0.02. The lines attributed to Ce3+ impurity centers with tetragonal symmetry and g factors (g‖ = 0.75, g⊥ = 2.4) close to those measured for the KY3F10: Ce3+ compound are separated in the complex EPR spectrum. The assumption is made that the aforementioned impurity centers are cubooctahedral clusters of the La 6F37 type in which one of the La3+ ions is replaced by the Ce3+ ion. © 2005 Pleiades Publishing, Inc.

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